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NOTES ON GEOGRAPHIC DISTRIBUTION

First record of the Bicoloured-spined Porcupine *Coendou bicolor* (Tschudi, 1844) for Brazil

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ABSTRACT: While travelling as part of the protected area management activities undertaken by the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) in the state of Acre, four records of porcupines (*Coendou* spp.) were gathered: two for *Coendou bicolor* and two for *Coendou prehensilis*. The records for *Coendou bicolor* are the first for Brazil while the records for *Coendou prehensilis* present the state of Acre as a potential region of sympatry between *C. bicolor* and *C. prehensilis*.

The erethizontid rodent genus *Coendou* (including *Echinoprocta* and *Sphiggurus*) contains 13 species, all inhabiting tropical and subtropical forests from Mexico to Uruguay (Voss 2011). Of these, six are known to occur in Brazil, with the Bahia Hairy Dwarf Porcupine *Coendou insidiosus* and the Paraguay Hairy Dwarf Porcupine *Coendou spinosus* being restricted to the Atlantic forest, Koopman's Porcupine *Coendou nycthemera*, *Coendou melanurus* and *Coendou roosmalenorum* being restricted to the Amazon and the Brazilian Porcupine *Coendou prehensilis* having a wide distribution throughout the entire country, except the southern tip (Bonvicino *et al.* 2008; Reis *et al.* 2006).

The Bicoloured-spined Porcupine *Coendou bicolor* (Tschudi, 1844) is a species currently known from the eastern Andean foothills and in adjacent Amazonian lowland forest, being distributed across Bolivia, Peru and Argentina (Voss 2011). The available information on the distribution of *C. bicolor* has however been plagued by taxonomic inaccuracies, with several supposed records for this species being ultimately attributed to *C. prehensilis* (Voss 2011). These two species, the largest neotropical porcupines (3-5 kg), resemble each other in body size (Leite *et al.* 2011), but can be distinguished by a series of morphological characteristics, one of the most conspicuous being the morphology and coloration of the quills (Leite *et al.* 2011; Voss 2011) (Figure 1). Whereas *C. prehensilis* has tricoloured quills, bright yellow basally, black in the middle, and white to pale yellow distally, *C. bicolor* has bicoloured ones, yellow-white basally and black distally (Leite *et al.* 2011; Voss 2011).

While travelling as part of the protected area management activities undertaken by the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) in the state of Acre, four records of porcupines (*Coendou* sp.) were gathered (Figure 2) and species identified using the different coloration of the quills (Figure 1).

Two records were of individuals of *C. bicolor*. The first record was of an adult individual crossing the BR 317 road in the Brasiléia municipality (10°48'38" S 69°22'05" W), within the buffer zone of the Extractive Reserve Chico Mendes and approximately 20km from the Bolivian border, at 23h on the 04/12/2012 (Figure 3a). The second record was of a road killed individual found in the AC 040 road, in the Senador Guimard municipality (10°07'12" S 67°45'15" W), about 50 km from the Bolivian border (Figure 3b). The remaining two records were of roadkilled individuals of the *C. prehensilis*. The first record was on the BR 364 road, Rio Branco municipality (10°02'41 S 67°16'10" W) on the 07/07/2010 (Figure 3c). The second record was on the BR 364 road, Sena Madureira municipality (09°04'06" S 68°44'05" W) on the 07/09/2010 (Figure 3d). It should however be noted that in the absence of a specific license to collect this biological material, it was impossible to obtain voucher specimens. As such, we were constrained to using photographic evidence taken while in the field to document this finding.

These four records are scientifically relevant for different reasons. The two former records are the first of *C. bicolor* for Brazil. This is reinforced by the recent confirmation that the records presented by Lara *et al.* (1996) were in reality of *C. prehensilis* (Voss 2011). The same mistake was presumably done by de Albuquerque

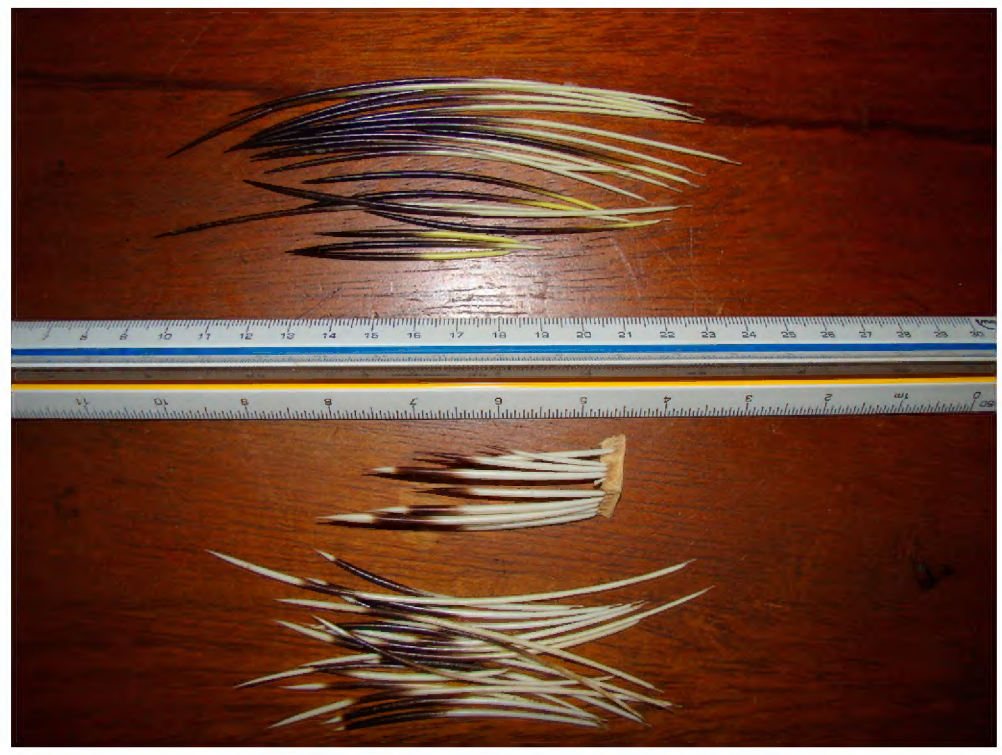

FIGURE 1. Quills of *Coendou bicolor* (above) and *Coendou prehensilis* (below).

and de Almeida (2002) when mentioning the species as being traded in the Caruaru market, Pernambuco, Northeast Brazil. This hypothesis is further supported by the findings of Alves *et al.* (2009), who conducted a similar study in the same market and identified the only porcupine species present as *C. prehensilis*. The two latter records, are noteworthy as they, together with previous records of the species (Calouro 1999; Silva and Drumond 2009; Voss 2011) and the new records for *C. bicolor*, present the state of Acre as potential a region of sympatry between *C. bicolor* and *C. prehensilis*. This possible overlap in distribution, while common in smaller neotropical porcupines, has yet to be documented in large bodied species (Voss and da Silva 2001). Further data is needed to verify this hypothesis and understand its ecological underpinnings and implications for conservation and management of these taxa.

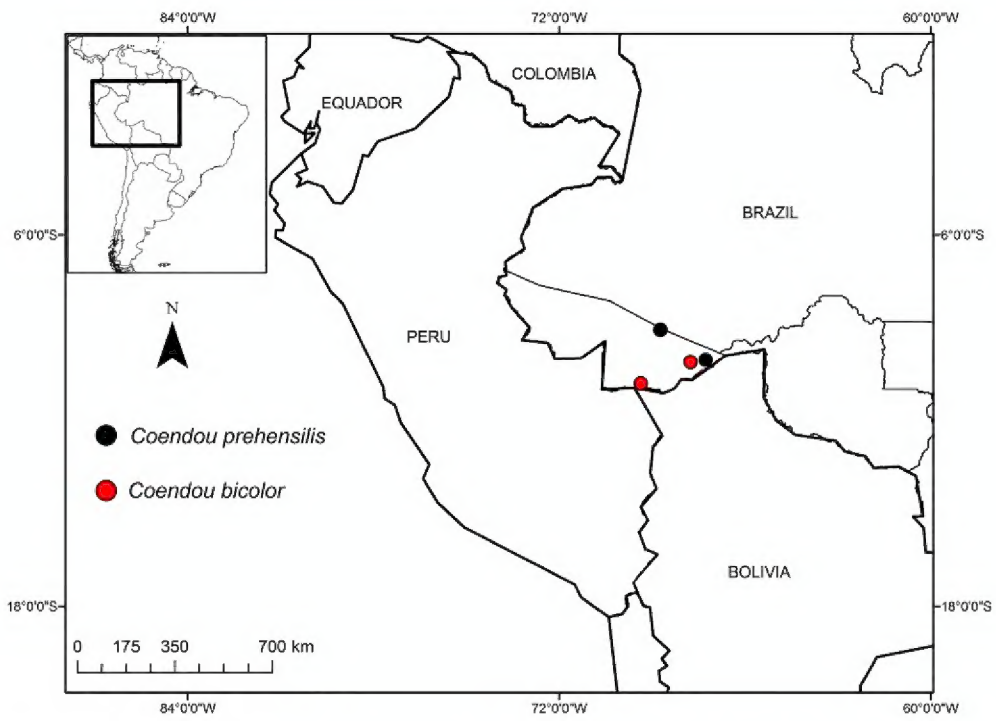

Figure 2. Map of two new records for *Coendou prehensilis* and two new records of *Coendou bicolor*, the first for Brazil.

These records highlight how less traditional sources of data such as roadkill or faunal rescues can prove to be an important and cost-effective complement to more traditional survey-based methods (de Freitas *et al.* 2012). This is especially important in the case of poorly known regions like the state of Acre, in the Brazilian Amazon, where the distribution of well known vertebrate groups continues to be updated (de Freitas *et al.* 2011a, b) and for poorly known groups such as neotropical porcupines, where basic aspects of taxonomy and species distribution are still largely unresolved (Leite *et al.* 2011; Voss 2011). In fact, faunal rescues conducted in response to following hydroelectric dam construction have already contributed to our knowledge of several species in this group (Mascarenhas and Puorto 1988; Vié 1999). Only by using all data sources available to us can we hope to increase our knowledge of biodiversity at a rate that enables us to face the escalating global environmental degradation.

Figure 3. Porcupines found while travelling as part of the protected area management activities undertaken by the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) in the state of Acre, Brazil. A. *Coendou bicolor*, BR 317 road, Brasiléia municipality. B. *Coendou bicolor*, road killed, AC 040 road, Senador Guimard municipality. C. *Coendou prehensilis*, road killed, BR 364 road, Rio Branco municipality. D. *Coendou prehensilis*, road killed, BR 364 road, Sena Madureira municipality.

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